# THE FARM INDEX

U.S. Department of Agriculture April 1976

## Farming in the 49th

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# Outlook

Americans' appetites for beef and veal show no signs of jading. Early indications point to record consumption this year—123 pounds per person, 3 more than in 1975.

Shoppers will pay more for that beef, at least through the first half of the year. However, prices of lower grade meats—hamburger in particular—will post faster advances than the quality cuts at retail meat counters. Reason is that slaughter patterns are getting back to normal, with more fed cattle coming to market and less of the nonfed cattle from which cheaper cuts are derived.

Fed cattle slaughter in April-June is slated to climb 20 to 25 percent from a year ago. While slaughter of cows this spring might about match year earlier levels, that would be a reduction of one-third from last fall's rate.

Reflecting the changed slaughter mix, prices for fed cattle at major markets are the lowest in a year. Cow prices are the highest in almost 2 years.

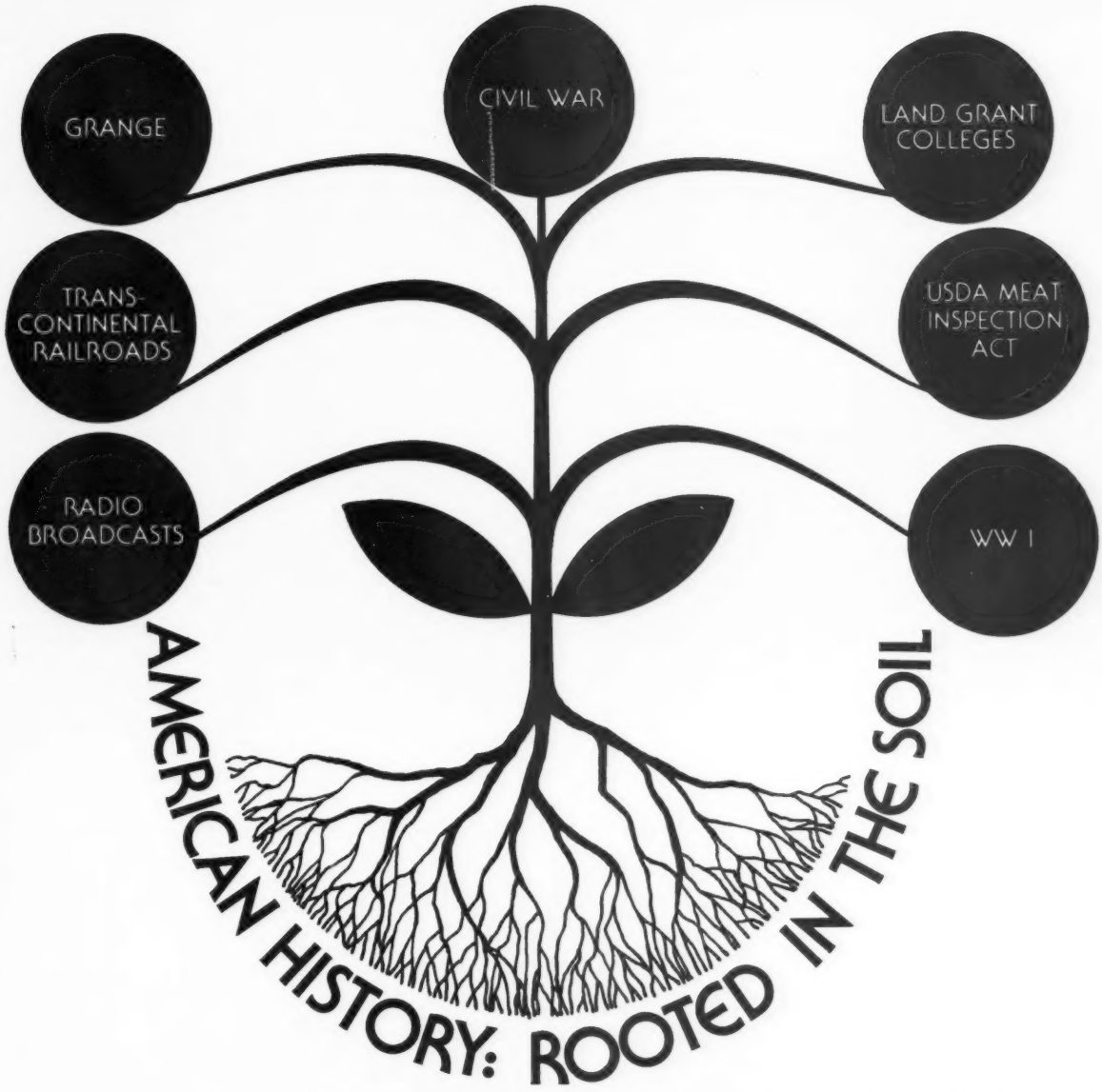
Cattle feeders are hurting. Current fed cattle prices spell losses for most feeders. Consequently, the rate of placements of cattle on feed during January and February dropped from the last quarter of 1975, and that may point to seasonally reduced marketings of fed cattle in the July-September period.

But for the year as a whole, the cattle industry should turn out more beef than last year—a gain of around 3 percent, by the mid-March forecast.

Economic prospects for the industry are not as glum as the current cost-price squeeze suggests. ERS livestock experts expect the price index for all cattle will rise through 1977. Cow-calf operations in particular should report improved returns.

Explanation: The cattle count this past January 1 shrank for the first time in 9 years, mirroring last year's liquidation of breeding stock and heavy culling of cows. The beef cow herd alone—cut by 4 percent from January 1, 1975—experienced its first decline in almost 20 years.

The drop in cattle numbers plus the recent pickup in cattle feeding have quickened the feedlot demand for feeders. If, as now seems likely, the cow slaughter declines in coming months, cattle prices should firm.




# Land of Turmoil

*The Land of Opportunity that drew thousands of European settlers into its wilderness became a Land of Turmoil in the half century after 1860. It was a time of great change as a strapping Nation grew into a giant. The land and the people who made it produce were at the forefront of this mighty awakening of America.*

On April 12, 1861, puffs of smoke appeared along the Charleston Bay shoreline as cannon balls ripped into Fort Sumter. A debate between morality and agricultural economics had erupted into the Civil War.

Three years, 11 months and 28 days later, some 350,000 Union and Confederate soldiers lay buried in battlefield cemeteries, from Gettysburg to Vicksburg. Most of them were farmboys who had been caught up in the rage of war.

On April 9, 1865, the aristocratic Virginia planter Robert E. Lee surrendered to Ulysses S. Grant, son of an Ohio dirt farmer, at Appomattox Courthouse. The war, the southern plantation system, and the institution of slavery all ended on that day.

The debate that culminated in the war had begun with the earliest settlers who brought in slaves to work tobacco fields.

**Economic drawback.** For a while, in the late 1700's it appeared that the slavery issue would be resolved by economics instead of bloodshed. Planters had found that slavery simply cost too much to maintain.

Then, in 1793, Eli Whitney designed a contraption to separate cotton from its seeds. Cotton suddenly became a highly profitable, labor-intensive crop that made slavery essential to the plantation system. Even though many planters, such as Thomas Jefferson, deplored slavery, they clung to it as an economic necessity.

In 1860, an opponent to the spread of slavery became President, and the planters led the South in seceding from the Union. War had erupted.

**Glorious adventure.** The war began as a glorious adventure. Southern belles turned out in fine carriages to cheer on the troops firing on Fort Sumter. Northern ladies carried picnics along as they followed Federal troops to Manassas. It was a lark that turned into a nightmare.

Five years later the smoke cleared after Appomattox, and then came the summer of 1865, a time of great chaos. If the war produced winners, the victory was tainted in the aftermath.

The South was economically, socially, and physically decimated. Great mansions were in ashes, and fertile fields grew crops of worthless weeds. It was a sad homecoming for Southern farmboys.

**A new struggle.** For thousands of Black Americans, the jubilation of freedom from the evil shackles of slavery had turned into confusion and anxiety. They searched desperately for means of livelihood in a ruined land, and, eventually they found survival in an often oppressive share-cropping system. In a sense, the end of the war was, for them, the beginning of a long struggle for economic and social equality.

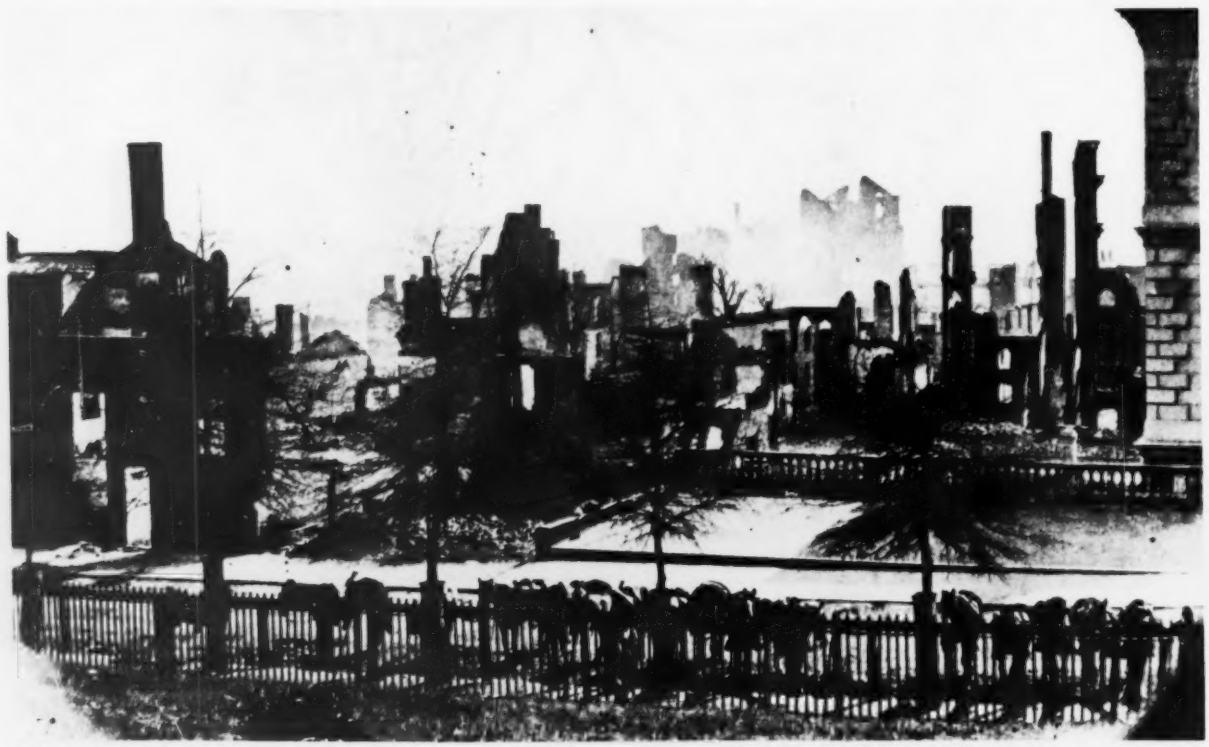
The Northern farmboys who had saved the Union found a new type of farming when they arrived home.

With few hired hands available to till the soil and their sons, too, in the armies, farmers searched for labor alternatives as food demands and prices soared during the war.

**Labor shortage.** A host of newfangled machines had been developed during the middle 1800's, but farmers had delayed investing in them because of the costs. Without human labor, the farmers were forced to buy machines.

In effect, a great revolution occurred while no one was looking. As farmboys fought one another in bloody battles, and while the whole world looked on, the noble horse was harnessed to machines to lead the "first American agricultural revolution."

This new day of agriculture would send millions of rural people to the cities to put pressure on its institutions and, at the same time,



*The grim ruins of Atlanta were all too typical of the homecoming received by Southern soldiers as the war was over. They found the South economically shattered by the ravages of war and the doom of the plantation system.*

*Far from the bloody Civil War battlefields, the horse led a quieter revolution of great consequence: the first American agricultural revolution. As men left farms for battlefields, horses filled the labor gap, prodding mechanization.*

provide labor for the budding industrial age. It would create a harvest of unthinkable proportions that would feed a hungry world.

**Years of turmoil.** In that context, it is no wonder that the great transitional years after the Civil War were filled with turmoil. By 1870, half the population lived in urban areas. Suddenly, the interests of farmers were no longer necessarily synonymous with the interests of the Nation as a whole.

Farmers began developing a new sense of identity. They perceived various other groups within society as being friends or enemies. It was in this climate that the first national farm organization evolved: the Grange.

In previous decades, farmers had become increasingly concerned with developing a voice to express their concerns to the Nation. Early in the 19th century, they began seeking government aid.

*The vastness of the Wyoming lands was a haven for ranchers. A chuckwagon is surrounded by rock formations.*

**The "common man."** At first the needs expressed by farmers were also those of the American public. The farmer was the "Common Man" when 9 out of 10 Americans were members of farm families. He wanted "cheap money" and banking system reforms. When these demands were met, they often undermined the stability of currency and contributed to the boom and bust cycles.

Farmers demanded better transportation. Improvements were made through political trade-offs that often resulted in wasteful abuses called "pork barreling."

**Farmer-laborer schism.** Farmers wanted to buy goods at the lowest prices, so they demanded low import tariffs. This was contrary to the interests of the other common man, the urban laborer, who wanted high tariffs to discourage imports made with "cheap foreign labor." This schism between farmers and laborers has continued through the years. The status of tariffs—high or low—seesawed up and down, depending on the political party in power.

As this sense of self-identity among farmers crystallized in the 1870's, the Grange grew in power.

Established in 1867 as the Patrons of Husbandry by employees of the Department of Agriculture, the Grange quickly spread across the Nation. Although it avowed to be nonpolitical, State Grange groups sought legislation to regulate railroads.

**Depressing development.** Grange members organized cooperatives for buying and selling, seeking to capture profits of marketing. These activities soon sparked a demise of the organization, since business ventures usually flopped for lack of capital and business expertise. When the depression of the mid-1870's struck, farmers abandoned the organization to avoid being held responsible for Grange debts.

Somehow surviving with a much smaller membership, the Grange resolved to confine its activities to social and educational endeavors.

Through lectures and demonstrations, it urged members to adopt improved farming techniques. Grange educational activities were soon joined by other institutions, such as USDA, Land Grant colleges, State agricultural societies, commodity based organizations, and the rural and farm newspapers and journals.

**Grange shuns politics.** The Grange's abandoned political involvement was assumed by other politically oriented farm organizations which learned through trial and error how to build membership, and function effectively in politics.

As a result, farmers became an organized and influential force in America, with a strong voice to express their needs and a structure to seek improvements in their lives and their occupations.

Education has long been a continuing concern to farmers. As soon as enough settlers arrived in an area,

*Farm life in the late 1800's was fraught with hardships and hard work. This Oklahoma Territory Soddy, a tiny homestead on a vast plain, is a far cry from the romantic notion of a rambling farmhouse on rolling, green fields.*

a school district was organized. Someone donated a piece of land, men cut lumber and built both the school house and its furnishings, then taxes were voted to buy equipment such as heating stoves and to pay a teacher's

**The school teacher.** The elected school board hired hard-working teachers who were expected to teach, clean the building, build fires in cold weather, and to "control" the rambunctious students. This miracle-working teacher was often a young woman who had recently graduated from an elementary school. School terms were carefully arranged to avoid conflict with planting and harvesting seasons.

Yet, with all the emphasis on elementary education, many farmers were reluctant to have their children educated beyond the elementary level before 1900. In large families, one son might be spared to go into the ministry, or to find urban employment that might lead to higher education.

During the last quarter of the 19th century, farming was hard, unprofitable work. More farmers began to seek higher education for their children as a means of escape from the farm.

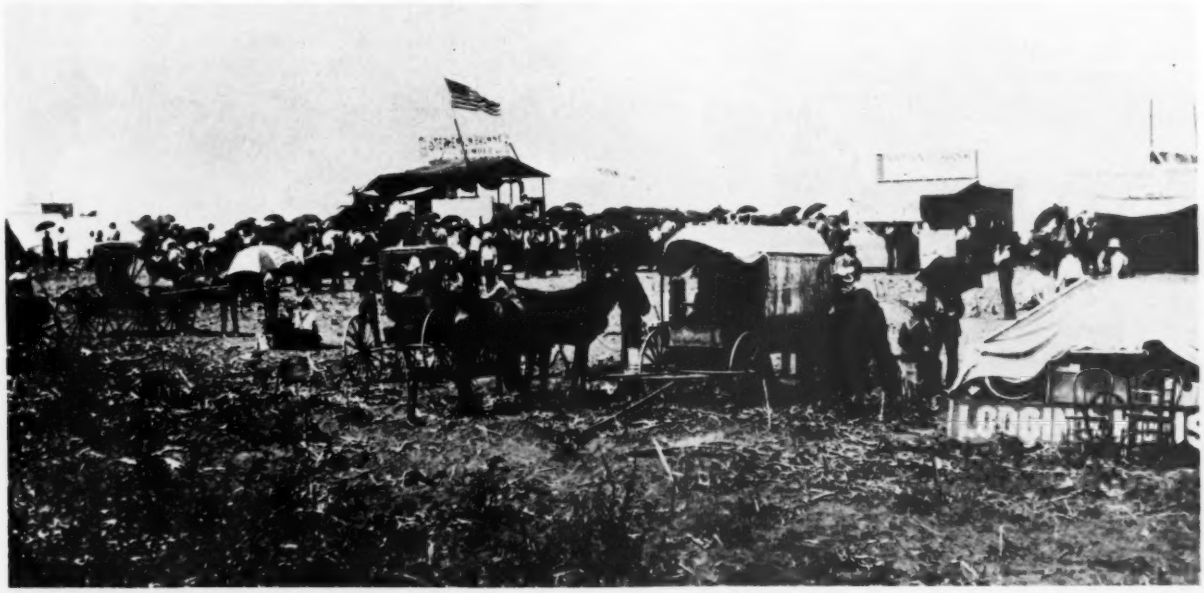
*Agricultural research at Pennsylvania Experiment Station produced this Armsby respiration calorimeter.*

**New careers beckon.** A farm boy who went to college often studied law, engineering, history, or a basic science, rather than agriculture.

At the turn of the century, though, this situation changed as farm prices suddenly boomed for two decades. State legislators provided more and more money to colleges, and student enrollment soared with the prosperity.

For the first time, enough students were interested in agricultural subjects. By 1910, colleges were so overcrowded that classes were being held in stables.

This new day of higher education planted still more seeds for the great agricultural harvest that would, in years ahead, not only profoundly affect the economic state of the Nation, but ensure survival for many



*Building on the prairie was complicated by the absence of dense, eastern forests. At Anadarko, Oklahoma in 1901, citizens are gathered for a lumber auction at a townsite auction booth.*

*Transportation has long been a major concern for farmers. Above, the need for good rural roads is dramatically demonstrated by farmers who must rely on real "horsepower." Below, homesteaders are clamoring aboard a train, awaiting the opening of the Cherokee Strip.*

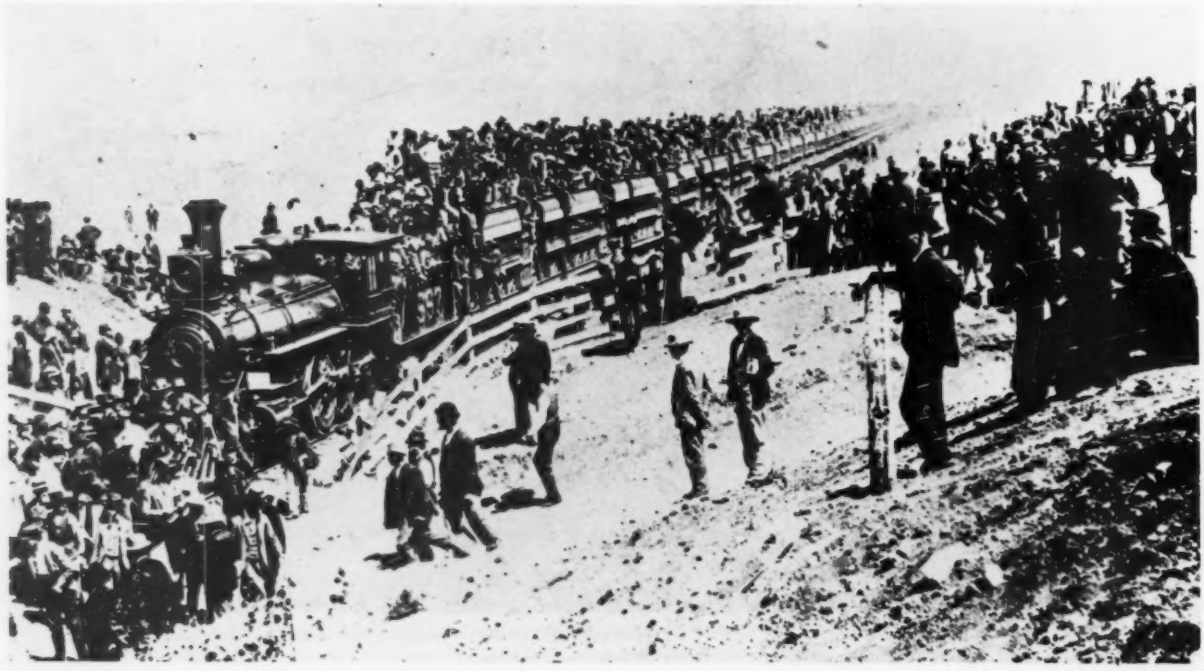
people around the world as food production tried to keep up with population increases.

**Four-point chore.** From 1900 to 1930, colleges began training a cadre of agriculturalists. Land Grant schools then assumed this four-point responsibility:

- Training research scientists in agricultural areas.
- Training communicators who could convey new knowledge from the laboratory to the farm.
- Training technologists, such as engineers, who could aid economic development of rural America.
- Training farm youths for non-farm professional jobs, thus reducing the tendency toward fragmentation of farms.

At the same time, these schools, along with USDA, solved many basic scientific problems of agriculture, and began research that eventually revolutionized productivity. Basic knowledge of genetics, nutrition, plant and animal diseases, and pests was developed in this era.

**Bring on problems.** On this foundation of research and education, American agriculture was ready to tackle age-old problems.



One such problem was transportation. At the turn of the century, a farmer expected to lose a fifth of his perishable crop after harvest through spoilage. The size of the marketing area was limited to the area from which a product could be shipped without exceeding this level of loss. As technology cut transportation time, marketing areas grew.

The first transcontinental railroad cut across the Nation in 1869. Within 14 years, four others straddled the continent. By 1890, the east was well served by feeder lines, and refrigerated and heated railroad cars were in wide use.

Transportation has been a vital concern since the Nation's earliest years when all able-bodied men were expected to work on road-building during certain seasons, in a tradition that came down from Middle Ages.

**New twist to roads.** In America, roadbuilding took a different twist. The Constitution specified that postal roads were the responsibility of the Federal Government. Some important interregional roads were built under this provision before 1820, but after that time the Government was more concerned with canal, inland waterway, and railroad development.

After 1900, interest in good roads was revived, as farmers wanted regular, door-to-door mail delivery. The advent of the automobile added still more incentive. Roadbuilding evolved into a major political promise in many States.

**Inspecting for safety.** With great transportation improvements and the nationwide marketing of agricultural products, the development of quality standards became necessary. The first meat inspection act was passed in 1890, and USDA was given the job of administering it. In 1901, USDA began studying grain grading and inspection problems, and in 1907 began a voluntary inspection service on grain. In the years that followed other inspection standards were devised for still other commodities to ensure that consumers would receive safe, high-quality foods.

**Quartz crystal sets.** Meanwhile, USDA was developing a nationwide system for providing buyers and sellers with price information for commodities at major terminal markets. At first telegraphs were used. But by the early 1920's, radio broadcasting was the prime means for getting price data. Farmers quickly acquired simple quartz crystal radio receivers for vital information that helped them decide what to raise and when to sell.

Still, some farmers fell into a quagmire of debt, while others prospered. USDA then directed research to determine the factors that made the difference between success and failure, to help farmers avoid the latter fate.

By World War I, arable public domain lands were taken. Farm tenancy, soil erosion, and declining yields were seen as aspects of a growing land-use problem.

**Saving the land.** Misuse of land had long been unrecognized or ignored because land was so plentiful and cheap. Finally, Federal and State Governments began to act to preserve the remnants of the great forests and the grasslands of the Plains.

Gradually, between 1900 and 1940, a land-use philosophy was developed by USDA and college economists and agronomists. The doctrine was that each piece of land should be analyzed and then used in accordance with its potential. However, with the most land under private ownership, the policy had to be initiated through education and persuasion.

It was difficult to convince a farmer, who depended on the sale of a given annual harvest, that the long-term welfare of the land was in his long-run interest. Lumbermen, cattlemen, and sheepmen had even less interest in preserving public domain. So it was politically difficult to enact land protection legislation.

**Mother Nature's tantrum.** As the 1930's came, the arguments of conservationists and other land preservation proponents were reinforced by a spectacular and devestating tantrum of Mother Nature: the great dustbowl drought.

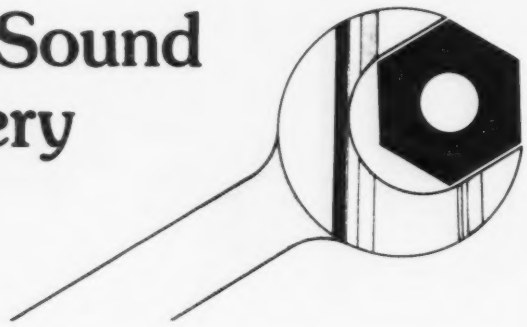
But, as that day of dusty ruin approached, American agriculture had achieved a success so awesome that the world was astonished. In the 60 years following the outbreak of the Civil War, the American farmer had armed himself with an amazing array of mechanized equipment, taken advantage of an elaborate and advanced transportation system, and had used the budding electronics technology to gain priceless information to run his enterprise.

Moreover, the great rise of agriculture had established an educational and research capability that would not only enable the institution to rise from the dust in years to come, but to provide harvests beyond human imagination.

[Based on the manuscript, *American Agriculture: From Wilderness to Bread Basket*, by Wayne D. Rasmussen and Jane M. Porter, National Economics Analysis Division.]

*Land use techniques became more than high-sounding theories when the Dustbowl howled in the 1930's.*

# Simple, Sound Machinery



Modern technology is not the antidote for every farmer's problem. For example, a combine that harvests grain in Iowa might not even be able to turn around in a tiny Asian rice paddy. Often, the job could be done much better by a simple, but mechanically sound piece of machinery.

Many of the world's farmers need sturdy, small, and lightweight machines built inexpensively of local materials which are easy to operate and repair.

In fact, a series of such machines have been designed for use in Asia, Latin America, and Africa, where farmers have small rice plots, by the International Rice Research Institute in the Philippines under contract with the U.S. Agency for International Development.

**Single-axle tractor**. One of the machines is a small, sturdy, 5-7 horsepower single-axle tractor which performs such operations as plowing, cultivation, and hauling. It sells for about $900, less than half the price of similar tillers imported from developed countries.

The 7-horsepower axial flow thresher uses three men to process 1 ton of paddy per hour. Besides rice, it can thresh and winnow sorghum, soybeans, and other small grains, and can be moved into the fields behind a small hand tractor, jeep, or truck. It costs $1,200.

**Multihopper seeder**. Another machine is the light, compact, multihopper seeder, which sells for about $50. A worker pulling the device can plant pregerminated seed at optimal spacing in six furrows at once. The seeder is easy to turn and lift and actually sows 20 times faster than the backbreaking transplanting method. Another hand machine is a small applicator that puts fertilizer into the root zone where it is needed, saving one-third to one-half the amount used in the traditional broadcast method. It costs about $15.

**Grain dryer**. There is a low-cost grain dryer, $570, made of locally available materials, which is compact, portable, and easy to use. It dries 1 metric ton of paddy in 4-6 hours, using either kerosene or rice hulls for fuel. The new method allows drying even during the rainy season—a big improvement over spreading the rice on a road to dry in the sun.

Food can be grown every day in the Tropics. In developing countries, these simple machines can be crucial to increasing food production, because they cut down on the time it takes to harvest one crop and get another into the ground.

**Miracle varieties**. Fast turnaround time has become important because of the introduction of high-yielding grain varieties. These new "miracle" varieties have a shorter maturation period than the traditional ones, thus allowing for multiple cropping—planting two or even three crops per year. Every day of turnaround time that is saved means more food grown in a year.

One advantage of making these rice-growing machines locally with simple tools is that they can also be repaired with simple tools. Also, their manufacture provides employment for local people. Few parts have to be imported, perhaps just a small motor, so very little balance of payment deficit occurs. If comparable small machines were imported from Japan or the U.S., the labor component of the machines' cost would go to workers in these countries, and precious foreign exchange would be used up.

**Close contact with manufacturers**. Building the machines locally has another advantage—there is a close

*Three men can process 1 ton of rice paddy or small grain with the 7-horsepower axial flow thresher.*

*Built primarily of local materials, the single-axle tractor can perform a number of farm operations.*

*The grain dryer handles 1 ton of paddy in 4-6 hours, using either kerosene or rice hulls for fuel.*

give and take between the farmer and manufacturer, so that a small-scale manufacturer can incorporate necessary modifications to reflect local conditions, whereas a big manufacturer in Japan or the U.S. couldn't afford to.

Although the machines seem to be a productive investment from a technical and economic standpoint, some observers complain that the machines tend to displace animal and human power. However, the water buffalo that may now have the job of pulling plows or threshing grain have certain disadvantages that machines don't—they need to eat and they're subject to disease.

**New jobs.** As for displacing people, the machines can change the way people are employed. At times of peak labor requirements, such as planting and harvesting, there may actually be a shortage of labor for traditional hand methods, so that harvesting, plowing, and land preparation cannot be done quickly, resulting in a decrease in the overall amount of food grown. If, however, with the help of mechanization, two or more crops are planted and harvested each year, a surplus of grain is likely to result. With more grain moving through the marketing channels new jobs are created in the marketing sector.

**Private investment.** One test of the success of these machines is that most of them are being produced with private investment around the world. This means that manufacturers and farmers believe they can earn back their initial investment, paying for the machines out of the increased production they allow.

In the Philippines, where such machines have been widely used, last fall's rice harvest was so successful that public buildings had to be converted to impromptu granaries. The mechanization of rice farming was credited as part of the reason for this bumper crop.

In some cases, the age-old manual farming methods, developed over centuries, may still be the best. The ultimate test of what technology is appropriate for a particular situation is what works. Where these simple machines do the job, they can help small farmers make the most of limited resources of land, water, seed, and fertilizer.

[Based on special material from the Information Division and Joseph Campbell, Professor of Agricultural Engineering, Cornell University.]

*The low-cost bellows pump, $28, can lift 50-60 gallons of water per minute to a height of 1-2 meters.*

*An efficient way to spread fertilizer is with this device, which saves up to half the normal amount used.*

# Farming in the 49th

You're looking up some agricultural data and you spot a small footnote . . . "Based on 48 States." Translated . . . Alaska and Hawaii are left out. But even though these relative newcomers don't figure in many statistical tables, they *do* have agriculture.

Of course, everyone knows that Hawaii grows pineapples, sugarcane, and orchids. Alaska, on the other hand, often brings to mind rugged terrain, glaciers, polar bears, and igloos—certainly not agriculture.

But agriculture it does have, as well as a great untapped potential for development. Last year alone, nearly $7 million worth of farm products were sold in the 49th State. That's in addition to food produced for the farmer's own use and much of the native villagers' production that never goes to market.

**Small business.** However, Alaskan agriculture—although well and thriving—is still a small part of the State's economy. According to the latest Census of Agriculture, only 1.6 million acres were in farmland in 1969—a mere scratch on Alaska's vast 375-million-acre surface.

Most of the farmland consists of grazing lands leased from the U.S. Government and from the State of Alaska. Excluding the large grazing leases, about 72,000 acres were in farms in 1969, only a fourth of which were in crops for harvest. The balance was in pasture and uncleared lands.

Farms are scattered from Ketchikan at the southern tip of Alaska to the isolated fishing village of Kotzebue at about latitute 67° N.

Most of the farms, however, stretch along the "Railbelt," which traces the State's main railroad line from Kenai Peninsula through the Matanuska and Tanana Valleys in the interior.

*Harvesting barley in Alaska's fertile Matanuska Valley.*

*The 789-mile pipeline advances through the vast wilderness.*

**Farming Alaskan style.** These farms produce most of the commodities grown in the "lower 48" (except for field corn and soybeans) and then some. Of course, growing conditions and scale of operations in the northern climate are often much different than down South.

Livestock raising in Alaska, for example, may sound like that in the "lower 48"—chickens, hogs, sheep, dairy cattle, beef cattle, or horses. Or it may have a strange ring—reindeer, buffalo, or musk ox.

And even for the familiar livestock, production methods may vary. Unlike in the "lower 48," dairy cattle and hogs must be raised in controlled-

environment housing, or the results will be uneconomical to the farmer even though the animals can generally survive the Alaskan winter. Chickens, too, must be raised indoors, but that's the way they're almost all raised in the others States anyway.

**Dairying No. 1.** Dairying is Alaska's front-runner in agricultural endeavors—it accounted for almost 34 percent of the value of production in 1974. In that year, over $2.5 million of milk was sold. And on January 1, 1975, 9,300 head of dairy cattle and calves were on Alaskan farms.

Commercial Grade A dairying came of age with fresh milk sales to our troops during the 1950's. Although this market has all but dried up, the demand for fresh milk remains strong among Alaskans and is growing with the influx of those attracted to the oil pipeline jobs. However, only 15 dairies were still in operation in 1975, compared with 35 in 1969. Still, though, slightly more milk was produced last year than in 1969.

**Eggs before chickens.** Chickens in Alaska are mostly raised for their eggs. Although Alaskans seem willing to pay a premium price for fresh farm eggs, this market advantage doesn't extend to broilers. Out of the 8,600 chickens counted in Alaska in 1974, only 400 were raised for meat—most probably for the farmers' own tables.

That year the Alaskan egg-laying flock produced 533,000 dozen eggs. Although down sightly in numbers from the previous 2 years, value-wise eggs came in for the fourth largest share of 1974 Alaskan farm output—6.6 percent.

**Fresh pork demand.** There is a strong demand for Alaskan-produced pork because fresh pork is a relatively perishable meat product. In Alaskan terms, that means it can't survive the boat trip from Seattle as can fresh beef. And air freight, the only other real alternative, makes fresh pork from "outside" an expensive luxury.

Although the demand is an influencing factor, the recent upsurge in hog production has mainly come about with the rediscovery that large interior areas of Alaska are well-suited for growing feed grains, particularly barley. And next to the chicken, the hog is the best converter of barley into meat.

In 1974, Alaskan pork brought around $77,000 at the marketplace. And near year's end, there were an estimated 1,100 hogs on farms in the State.

**Grazing drawbacks.** With many of Alaska's acres better suited for rangeland or feed grains than for other crops, the cattle industry appears a natural one. However, there are some drawbacks.

First, due to the long and often harsh winters, grazing lands on Alaska's mainland provide forage for only 4-6 months a year. The rest of the time, the animals must be fed grain or forage, an expensive proposition, particularly if the feedstuffs are shipped in from the "lower 48." (On the Aleutian Chain and Kodiak Island, however, cattle can generally graze year round.)

Another factor has to do with the nature of Alaska's grasslands. A plus is that the abundant natural water sources and the climate keep the grasses from drying out in midsummer as they tend to do in the "lower 48." A minus is that by midsummer some of the rapidly growing native grasses—such as arctic bluejoint—become rank and unpalatable. By careful range management, however, the grass can be kept from reaching this undesirable state. Also, some successful research is being done to introduce new, more desirable species of grasses such as bromegrass and even Kentucky bluegrass.

**Beef marketing setup.** Another problem is marketing. No Alaskan beef is USDA graded, due to the prohibitive expense of maintaining grading inspections with small-volume slaughtering. This puts fresh Alaskan beef at a disadvantage, particularly with the military market, which requires graded beef.

Also, transportation distances become a problem, both to the slaughterhouse and on to the retailer. And due to the small numbers of cattle going to market, no full-scale processing plants exist—valuable byproducts must be discarded.

As a result of the marketing situation, almost all Alaskan beef is sold as locker beef, most directly from the farmer to the consumer, but some for use in manufactured beef products.

**Rangeland inventory.** Alaska's cattle numbered 7,100 head on January 1, 1975, up 500 from a year earlier. Most of the herds were on Kodiak and other islands along the Aleutian Chain and on the Kenai Peninsula.

Sheep also do well on Alaska's rangelands, but there is less demand for their meat than for beef. However, the sheep are sheared annually for their wool. At the beginning of 1975, there were 12,400 head on farms, down 1,600 from a year earlier. More than 95 percent of the sheep were on the Aleutian Islands.

Although not raised for meat or meat products, horses outnumber dairy cows and calves in Alaska. Some of the horses are used in

*Fishing—the lifeline of the Eskimo village of Kotzebue.*

*What does Alaska's future hold for its increasing population?*

ranching and some for traditional big game hunting outfits. Most, however, are kept for pleasure riding and horse shows.

**Exotic livestock.** In the heyday of Alaskan agriculture at the turn of the century, some "exotic" livestock were brought to Alaska to see how they would fare. Among them were buffalo and musk ox. (Actually, in another age, musk ox were once native to the State).

The original herd of 23 buffalo was set free in 1928 and quickly adapted to Alaska's mainland climate. As a result, the State has the only two herds of wild, unfenced buffalo in the U.S.

The musk ox were 34 strong when brought from Greenland in the early 1930's. They, too, were soon set free and have adapted well to Alaska's tundra areas, where only one other commercial animal roams—reindeer. The ox has a fine quality wool and can also be eaten. Efforts are underway to domesticate and manage the animal—a tall order.

**The multipurpose reindeer.** Reindeer have played an illustrious and important role in Alaska's agriculture since they were first brought to the State from Siberia in 1892. During the Nome gold-rush era, they fed many a miner or pulled his provisions. And by 1933, the reindeer population had mushroomed to an estimated 640,000.

Although their numbers have shrunk since that era—to only 25,000 head in 1970—the reindeer is still herded by some Alaskan natives. Most of the meat and hides are used by the herders and their families, but some antlers are exported to the Orient where their powder is highly valued as a love potion.

Since 1937, reindeer ownership has been restricted by law to Alaskan natives. USDA's Extension Service is now working with the local native leaders to boost the industry. As part of this effort, a reindeer herder's handbook is scheduled to be off the press this year.

**The northern climate.** Although much of Alaska's agricultural land is better suited for livestock grazing than crop production, Alaska can and does produce a variety of crops. What the State lacks in growing season length, it basically makes up for in hours of daylight. At midsummer's peak, crops have 16-20 hours of sunlight during which to grow.

Past experiences, however, have shown that cold-hardy crops which thrive in the "lower 48" don't necessarily make it in Alaska, where the soils are generally less fertile and vary widely in composition.

As a result, USDA and the Alaskan Government have been testing plant varieties from other northern climates and doing research to develop new plant strains. The recent Alaska Plant Materials Center in Palmer is an outgrowth of this effort.

**Forage biggest crop.** To date, forage crops have been the most successful in Alaska. Hay, at an alltime high of 15,000 tons in 1974, accounted for a fourth of the total value of that year's agricultural production. Silage accounted for another 6 1/2 percent.

A mainstay of Alaskan forage production is oat/pea silage. It is mostly fed to dairy and beef cattle, and is usually grown near the herds because it does not hold up well when transported long distances. Most of the rest of the State's forage comes from perennial grasses such as bromegrass and timothy.

New forage possibilities on the drawing boards are recently developed strains of alfalfa as well as some grasses and legumes from other northern climates such as Siberia and Scandinavia.

**Feed grain production.** The most successfully grown feed grains in Alaska have been barley and oats.

*Dairying is the State's No. 1 agricultural enterprise.*

Barley, in particular, has been in demand by dairymen and cattle raisers. Oats have generally been grown more as a forage crop than as a grain, but the two new oat strains could up the acreage for grain. A new market twist: Last year the majority of the oat-grain crop was cut in the green stage and sold as ground cover for reseeding and oil spill material on the trans-Alaska pipeline.

Wheat has been grown to a limited extent in Alaska, but its yields are lower than either barley or oats. Warm-weather grain crops of the "lower 48" such as field corn and sorghum just haven't been able to make it in Alaska.

**Potato top vegetable.** Of the vegetables grown in Alaska, potatoes have by far thrived the most. Although 1974 production was down to 71.3 million pounds (the second lowest on record), production has normally been above the 100-million-pound mark. The 1974 dip can be blamed mainly on the drought which hit the Fairbanks area.

Alaska offers a nearly ideal environment for the potato. Such troublesome pests as the potato beetle, white grubs, tuber worms, and most potato blights and viruses are unknown to the State.

Production is held back, however, by three main factors: (1) lack of capital to finance mechanization necessary for efficient production and marketing, (2) inadequate storage facilities, and (3) the absence of any processing plants.

**Fresh market limit.** A wide variety of other vegetables are also grown in Alaska, but they are limited to the fresh market because again, there are no processing plants. With the State's increasing "pipeline" population, however, processors may be attracted to the State.

Outside of potatoes, vegetables that are most easily grown in Alaska are radishes, turnips, cabbage, cauliflower, broccoli, brussels sprouts, peas, carrots, green onions, leaf lettuce, head lettuce, and rhubarb.

Lettuce heads up the output with nearly 9 million pounds in 1974. Cabbage was next with 3 1/2 million pounds, followed by carrots at 600,000 pounds.

Although limited to greenhouse production, tomatoes and cucumbers are being grown in increasing quantities as demand goes up in the State.

**The mighty bee.** One difficulty in greenhouse agriculture, however, is pollinating some crops, such as cucumbers. Hand pollination is expensive and laborious, and importing bees and managing them indoors can be expensive, too. However, some new plant strains are being developed which cut down on the problem.

Although few bees are brought into the State to aid in indoor pollination, interest in outdoor beekeeping is building—for honey production, that is. The only damper appears to be the scarcity of bees.

*(Continued on Page 22)*

# From Folly To Riches

Alaska has come a long way from "Seward's Folly" in 1867 to the sought-after land it is today. The "Icebox" label is melting away as Government officials, native Alaskans, and others realize the State's tremendous potential—economical, recreational, environmental, and agricultural.

And two big factors are in the process of shaping the State's future: the trans-Alaska pipeline, and the Alaska Native Claims Settlement Act.

Since construction began on the pipeline in March of last year, workers have been coming into the State. As a result, population has swelled by about 75,000, mainly in the cities.

The burgeoning population isn't likely to have any immediate effect on agricultural output, though, because demand has always outpaced the supply. However, since many Alaskan farmers have been supplementing their incomes with off-farm jobs, especially in the winter, their overall incomes could be hurt by increased competition for these jobs.

Also, urban sprawl could be a problem, converting farmland into residential and industrial areas. Something is being done to halt this trend, at least in the Matanuska Valley—the State's main agricultural area. Last July, the borough auctioned off parcels of potential farmland totaling 8,000 acres, with one stipulation—that the land never be used for anything but agriculture.

The "oil boom" could, by bringing more people to Alaska, attract some food processors and distributors to the State, which would in turn give agriculture a boost. However, for the State's agriculture to expand very much, other catalysts are necessary: farmworkers (mainly seasonal); money for farm inputs such as machinery and fertilizer; plants, seeds, and farming "know-how" compatible with subarctic conditions; and suitable land.

The last of these—suitable land—brings up the question of how much of Alaska's vast acreage is good for farming. The answer: a lot. In addition to the 1.6 million acres of land currently in agriculture, another 16 million acres have been identified as having appropriate soils and climate for farming. That's more acreage than Iowa devotes to corn growing.

However, the Alaska Native Claims Settlement Act of 1971 could greatly affect the number of Alaska's acres left open for development as farmland.

In addition to the provision for native claims, the Federal law allows the Secretary of the Interior to withdraw up to 80 million acres for National forests, parks, wildlife refuges, and wild and scenic river sites. And once taken in to the Federal system, most of these lands will be closed to mining, farming, or any other type of development.

The issue of which lands will be chosen for which purposes remains open through 1978 and, in the end, rests in the hands of Congress. Meantime, Alaska's biggest resource—land and its natural wealth—remains in the balance.

# The Economics of Aging

A hundred years ago, when most Americans lived on farms, growing older simply meant staying at home, working less and less, but still deriving economic security from the family.

Not so today. The rest of the family now lives somewhere else. Extended family households and close community ties have become fragmented as younger family members have heeded the call of the city and taken jobs far from their parents' homes.

Now older people are not only living longer and gaining in numbers, but are becoming increasingly dependent on their own current incomes. And for many, especially those in isolated rural areas with scarce social services, growing old has come to mean the threat of economic hardship.

**Incomes lag.** Although the median income for older Americans has greatly improved in recent years, they still lag considerably behind other age groups. In 1974, families headed by someone 65 or older took in less than half what families in the 45-64 age bracket received—$7,298 compared with $15,575. More than a fourth of all aged families lived on less than $5,000 a year (or less than $96 per week).

The median income for elderly persons living alone was even lower—$2,956 a year, or $57 per week. Over two-thirds of the aged individuals received less than $4,000, and more than half, less than $3,000 annually. Single women—who made up nearly three-fifths of all the elderly living along—fared the worst of all, with a yearly median income of $2,375, or less than $46 per week.

**Rural plight.** More than one-third of the elderly live in nonmetropolitan areas—a greater share than of the rest of the population. Their concentration is particularly high in the Great Plains and midwestern farm belt States—areas that experienced an outpouring of younger people until recently.

One of the hard facts of growing old in nonmetro America is having an even lower income than that received by elderly metro residents. Since rural workers generally have lower lifetime earnings, they qualify less frequently for higher retirement benefits under Social Security or other retirement plans.

About 22 percent of the aged in nonmetro areas lived in poverty in 1973, compared with a little less than 13 percent in metro areas. Half of all the low-income elderly lived in nonmetro areas.

**Complicating factors.** Aside from the bleak income picture, the nonmetro aged face other special problems that compound their financial situation. Distances between people, and in some areas inadequate roads, complicate the delivery of services to older residents. At the same time, the costs of owning and running a motor vehicle, coupled with a lack of public transportation, limit them from coming to the services.

Also, nonmetro elderly are generally in poorer health than their metro counterparts, and have less health care services because of shortages in specialized medical personnel. Nursing home facilities and trained per-

sonnel for these homes are also less adequate.

Substandard housing is another problem. Dwellings occupied by the urban elderly are generally more sound, need less repair, have more adequate plumbing, and better upkeep and appearance than those occupied by nonmetro elderly.

**Signs of change.** As areas develop, however, medical and other technological benefits become more widely accessible, and there are signs that lifestyles and standards of living of metro and nonmetro residents are coming closer together.

For one thing, many nonmetro areas have experienced a turnabout in population flows since 1970. Instead of losing people, they are retaining them and even gaining in population. Inmigration of the elderly has occurred in counties of the Upper Great Lakes, Arkansas Ozarks, hill country in central Texas, foothills of the Sierra Nevadas in California, and coastal plains of east Texas.

However, despite its benefits for community growth, inmigration to nonmetro areas could place additional hardships on the elderly already living there.

**Resource crunch.** Increased demand for sewer, water, school, or recreational facilities may require raising taxes. Also, those moving into nonmetro communities could compete for local and State resources currently going to older residents. Furthermore, the elderly arrivals will often contribute little to the area's tax base.

Other issues affecting our older population's need for income and services cut across geographical and statistical boundaries—confronting metro and nonmetro elderly alike.

One such issue is inflation. While spiraling prices eat away at many incomes, the elderly feel inflationary pressures more severely, particularly when dependent on a fixed income. Even more important, prices have been rising rapidly in several budget categories critical to senior citizens.

**Spending patterns.** According to family budgets developed by the Bureau of Labor Statistics, an older couple spends a greater share of its income on food, housing, medical care, and transportation than younger folks. The intermediate budget allocates about four-fifths for these four items, while the proportion in the lower budget is even greater—84 percent. In the four areas where the elderly spend most of their money, inflation rates have generally exceeded those for all other items in the Consumer Price Index.

Several developments could help older Americans cope better with inflation: (1) delayed retirement, (2) improved Social Security and supplemental income benefits, and (3) expanded employment opportunities.

*Delaying retirement.* Early retirements can be costly. For those retiring between 62 and 65, Social Security benefits are reduced by a rate of 6-2/3 percent per year for each full year before 65. And for the 90 percent of our elderly who receive retirement pensions, Social Security is clearly the most important program.

**Source of income.** In 1967, it was the sole source of income for about 62 percent of aged married couples and 72 percent of single persons. About half of all elderly had some income from assets, but for most the small amounts received from interest, dividends, and rent were only of minor importance as retirement nest eggs. Only 20 percent of the beneficiaries received another retirement income—mostly from a private plan. Because so many elderly depend solely on Social Security, it's important that older workers become

familiar with the economic consequences of early retirement.

*Improving benefit levels.* Between December 1969 and July 1975, average Social Security benefits soared 82 percent as a result of cost-of-living adjustments and higher earnings for the recently retired. During the same period, the Consumer Price Index rose 44 percent. These benefit increases have substantially improved the elderly's income position, reducing the number of older persons below the poverty threshold from 4.8 million in 1969 to 3.3 million by 1974.

In addition, the Supplemental Security Income program that became effective in January 1974 provides a guaranteed income floor for the low-income aged, blind, and disabled.

**Falling behind inflation.** However, Social Security increases throughout 1974 and the first half of 1975 fell below price rises, since the rapid price hikes that occurred in early 1974 weren't included in the automatic benefit adjustment.

A basic problem with the current methodology used to compute benefit increases is that the Consumer Price Index may not fully reflect the expenditure patterns of the elderly. Not only do they spend a greater share of their budgets on food, housing, medical care, and transportation, but their expenditures within these and other items that make up the CPI are different from the younger population.

For example, in FY 1974 per capita medical expenses for persons 65 and over were $1,218, compared with the $420 for those 19 to 64. Excluding medical insurance payments, average out-of-pocket costs were $117 for persons under 65 and $415 for those 65 and over. Possibly a different weighting system of CPI items would be more pertinent for the elderly.

*Employment opportunities.* Retirement is a difficult step for many older workers, especially if it results in a substantial drop in income and social status. In our work-oriented society, jobs often form a crucial part of our identity, and opportunities for starting a rewarding second career after retirement are limited.

**Filling the gap.** For some older people, community service employment programs established under Title IX of the Older Americans Act may fill in the gap. Sponsored by several public and private agencies, these programs provide part-time jobs in various public service fields to low-income persons 55 or older with poor employment prospects.

However, as of August 1975, only 12,402 positions were available under Title IX programs—representing only .06 percent of all persons 65 or older. In most months, several applicants vied for each opening, suggesting that many low-income elderly are willing and able to work. As a larger share of the labor force retires earlier and in better health, there may be increasing demand for post-retirement employment programs.

Coping with inflation is a major economic problem for many elderly Americans, but not the only one. Another issue affecting their economic well-being concerns the complexity of Federal assistance programs.

**Benefits vs. earnings.** For example, Social Security recipients should carefully weigh their potential earnings against possible benefit reductions if they want to work after retirement. Under the program's retirement test, beneficiaries 65 to 72 years old can currently earn up to $2,760 without a reduction in benefits. Above $2,760, benefits are reduced by $1 for each $2 earned. This is equivalent to a 50-percent tax rate. However, recipients over 72 can exceed the earnings limit without a benefit reduction.

The Supplemental Security Income program also has a feature elderly recipients should keep in mind. The rules allow $20 unearned income per month before benefits are reduced. Any unearned income above this amount results in a dollar for dollar reduction in supplemental security payments. Unearned income includes Social Security benefits, dividends, and private pensions.

**Income distinction.** However, earned income is treated more generously—$65 may be earned monthly without any benefit reduction. Earnings over $65 are docked by $1 for each $2 received. Under the current benefit schedule, a single individual with unearned income of $140 a month would receive a supplemental security income payment of $38. If the $140 had been earned, the payment would have been $83.

Although this system would appear to encourage work, when payroll taxes, income taxes, and Social Security benefit reductions under the retirement test are also taken into account, working may not appear as attractive. One study showed how a rise in gross earnings by $480—from $5,320 to $5,800—increased net income by only $20, an effective tax rate of 96 percent. Results differed according to earning levels, tax brackets, and amount of benefit reductions.

Low-income elderly should also be aware of the asset test for the supplemental security income program, which treats single persons differently from married couples, and gives some homeowners a break over renters.

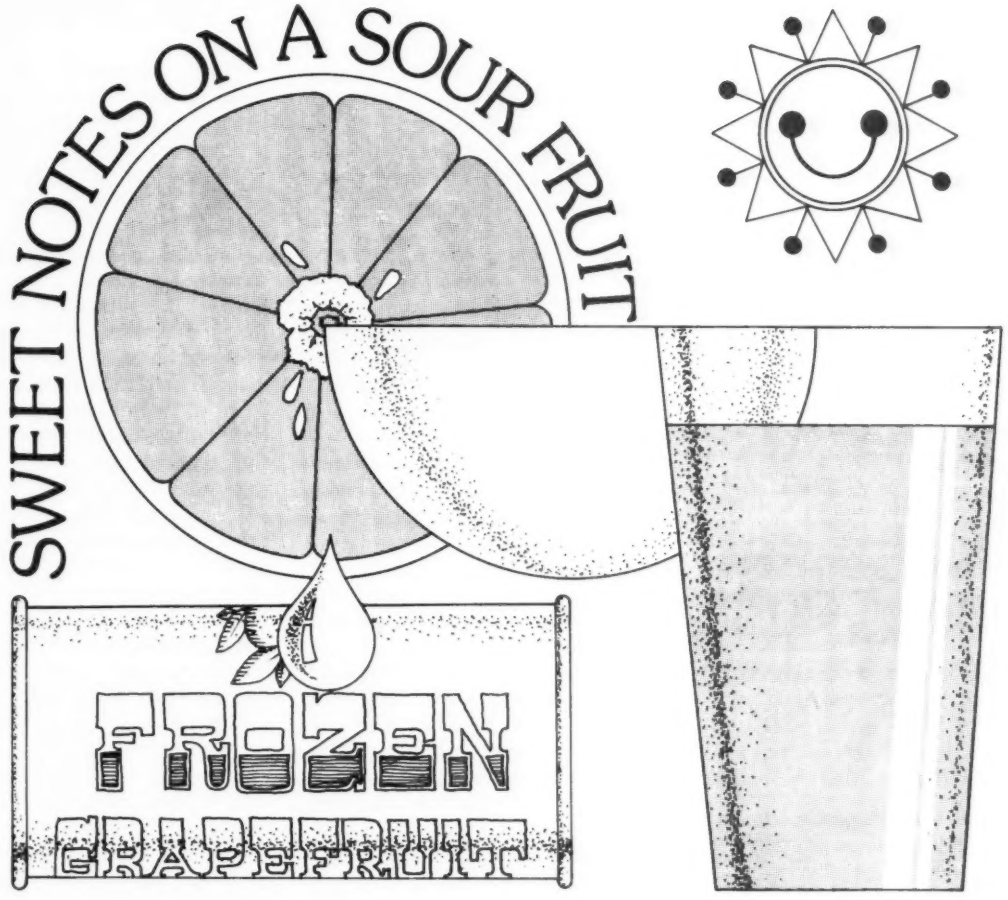
**Assessing eligibility.** A single person is eligible for supplemental security payments if the total value of his "nonexcluded" assets is below $1,500. The allowance for couples is $2,250. Assets excluded from the test are homes, household goods, personal effects, automobiles, and income-producing property yielding 6 percent or less of its market value as income. Homeowners with a house valued up to $25,000 who otherwise meet the income test are eligible for supplemental security income.

However, renters—who made up about 30 percent of all elderly households in 1973—are allowed only the basic eligibility amounts in the asset test. Also, non-car owners aren't allowed an equivalent asset value up to the $1,200 given to car owners.

People have been encouraged to provide for their retirement needs, but the program's rules make it important to carefully consider the form in which accumulated assets are held.

[Based on Elderly Americans: Emerging Economic Issues, by Donald K. Larson, Economic Development Division, paper presented at the seminar "Science and Aging," held at the University of Kentucky in Lexington, November 14, 1975.]

# SWEET NOTES ON A SOUR FRUIT




More and more Americans are starting off their day with a glass of grapefruit juice. The big, yellow fruit with pucker power, our second leading citrus crop, should have a sunny future.

Although the total farm value of the grapefruit crop is small compared with such leading fruits as apples, oranges (grapefruit's number one rival), and grapes, the grapefruit industry has undergone much the same changes as those for other leading fruits.

There are four major grapefruit producing States. Florida, the granddaddy of them all, dominates two-thirds of the total U.S. bearing acreage and produces about 75 percent of the total crop. Comparing the 1955-57 average with that of 1973-75, Florida's output of the tangy fruit increased 25 percent. A record crop of 2.1 million tons is expected in the 1975-76 season.

**Second largest producer.** Although Texas remains the second leading grapefruit State, weather has caused severe acreage and production fluctuations over the last 2 decades. For example, a bitter freeze in 1951 virtually wiped out the mature trees, reducing the bearing acreage to 17,900 acres from 56,000 acres the year before. Today's total bearing acreage is about 33,100.

The Lone Star State's production of grapefruit has ranged from a low of 3,000 tons in 1962-63 to a high of 472,000 tons in 1972-73. Consequently, its share of the total U.S. crop during this period fluctuated from less than 1 percent to 18 percent. The current crop will likely total 440,000 tons.

**Small, but growing.** California and Arizona are two relatively minor grapefruit producing States. Nevertheless, their rate of increase in bearing acreage has been greater over the past 20 years than for Florida and Texas. California's bearing acreage grew to a sizeable 16,500 acres in 1974-75, compared with only 8,200 acres in 1954-55. Although Arizona's grapefruit acreage has not expanded as rapidly as California's, it has still increased 40 percent since the 1954-55 season.

Although the two western States produce only about 10 percent of the total U.S. crop, their combined production between 1955-57 and 1973-75 increased by nearly two-thirds. This was mainly due to a large output in California.

**Production boom.** U.S. grapefruit production shot up 43 percent over the past 2 decades, thanks to an expansion in bearing acreage as well as an increase in yield per acre. During this time period, yield per acre ranged from a low of 10 tons in 1963-64 to a high of 15.7 tons in both 1966-67 and 1971-72. Greatest variations occurred as a result of weather.

The grapefruit industry has been characterized not only by a rapid expansion in supply, but also by significant changes in demand for grapefruit products. Striking shifts have occurred in the domestic market as well as in consumers' tastes over the last 20 years.

**Fresh fruit sales.** Although total sales for fresh fruit went up approximately 15 percent over this time period, the amount of grapefruit sold fresh in relation to all other grapefruit products declined from 53 to 43 percent.

Nearly 60 percent of the grapefruit sold are currently processed into frozen, chilled, and canned juice, and chilled sections and salad—about 10 percent more than in the late 1950's.

**Consumers prefer processed.** Annual per capita consumption of grapefruit has followed a similar trend. For example, consumption of fresh grapefruit decreased from 10.1 pounds per person in 1956-58 to 8.4 pounds in 1973-75. In contrast, consumers ate more fruit in the processed form during this period—12.3 pounds compared with 7.8.

Consumers favor processed fruit because it is both convenient to use and timesaving, important considerations with today's hectic lifestyles. In addition, unlike fresh fruit, processed grapefruit is available the year around.

While the demand for grapefruit will increase in the years ahead due to population growth and a continued increase in disposable personal income, the average person may not eat much more grapefruit.

**Chilled juice heads the pack.** Consumers may use slightly less canned juice in the future, although interest in nutrition and diet foods will keep it as a leading processed item. Frozen concentrated juice will gain in popularity, but not as much as chilled juice, which owes part of its success to mass merchandising through chain store dairy cases. The per capita consumption of fresh fruit and other minor processed items is not expected to change significantly from current levels.

**Good prices for growers.** During the last 2 decades, on-tree returns for grapefruit reached a record high in 1963-64, due to a substantial decrease in output as a result of a hard freeze in Florida and Texas in December 1962. During this season, grapefruit prices for all uses averaged $2.20 per box, compared with only 67 cents in 1955-56. As production eventually recovered, prices declined, only to rise again in 1967-68 due to another freeze. Grapefruit prices have remained relatively high in recent years, influenced in part by the high rate of inflation.

California's grower prices for fresh market grapefruit are generally above those of Florida and Texas because large quantities are sold during the summer, which is off-season for Florida and Texas shippers. Florida grapefruit prices are generally higher than Texas', because Texas grapefruit have a limited marketing area and Florida grapefruit are available for a longer marketing period. The marketing pattern for Arizona fresh grapefruit is generally similar to California's, and their prices move with those of California grapefruit.

**Lower on-tree returns.** On the whole, on-tree returns for processing use are substantially lower than for fresh market. Florida grapefruit bring a higher price for this purpose than those from the other producing States because they're more in demand.

Although a large amount of Texas grapefruit goes to processing outlets, packer demand is still not very significant. Consequently, prices paid by processors for the Texas crop have usually been less than for the Florida fruit during the last 2 decades.

The prices paid to California and Arizona growers for processing are low because in these States processing is generally considered as little more than a salvage operation.

**Other cost factors.** The major factors which have a bearing on grapefruit prices are total domestic production, supplies of competing fruits, the level of disposable personal income, population growth, and exports.

The U.S. is the leading producer of fresh and processed grapefruit. In the past we had virtually no competition for our exports, but things have changed considerably in the past 20 years. The U.S. share of world output dropped from approximately 90 percent in the mid-1950's to 75 percent in the recent years as other countries—especially Israel, Argentina, South Africa, and Cyprus—greatly expanded production, enhanced the quality of their fruit, and improved their methods of marketing.

**Expanding U.S. exports.** Although rising production around the world has intensified competition for U.S. grapefruit in the world markets, our exports of fresh fruit have increased dramatically during the last 20 years—from 2.2 million boxes in 1955-56 to 6.3 million in 1974-75. This was mainly attributed to a substantial increase in shipments to Japan, which has now replaced Canada as our leading export market for fresh fruit. The opening of fresh fruit markets in East Germany and Poland should also stimulate U.S. exports.

The outlook for processed grapefruit exports also looks promising. We are the world's leading processor and have no major competition for these products. Israel, our principal competitor in foreign markets, relies most heavily on fresh fruit.

High consumer incomes, increasing awareness and acceptance of grapefruit products, and improved storage and distribution systems abroad are expected to contribute to larger exports. Furthermore, promotion for processed grapefruit products abroad could further increase our exports.

[Based on "U.S. Grapefruit: Trends and Outlook" by Ben W. Huang and Andrew A. Duymovic, Commodity Economics Division, in the March Fruit Situation.]

# World Fertilizer Story: Some Encouraging Words

Fertilizer was spread thinly around the world in 1974, and many farmers wondered whether things would ever get back on even keel. Then in 1975 the situation turned the other way. Sky-high prices of the year before caused farmers to cut down on fertilizer purchases, with the result that shortages disappeared and prices slid from record peaks.

The picture for 1976 is still blurry. The problem this year is that the fertilizer industry, faced with large inventories and steep production costs, is trimming output. Supplies of nitrogen are tighter than phosphate or potash, though there should be enough nitrogen to meet the demand.

But, the longer-range outlook—through 1981—calls for improvement. Those in ERS who monitor the world fertilizer situation have some encouraging words.

**Encore doubtful.** The experts term "unlikely" a repeat performance of tight world market conditions for fertilizer in the next several years. They foresee a hefty gain in fertilizer output in the late 1970's, namely, nitrogen and phosphate. Here's why:

The developing countries show signs of steadily upping their share of both fertilizer production and consumption. Growth rates for production will outstrip the projections for usage. A number of developing nations will either approach or achieve self-sufficiency in nitrogen and phosphate, especially the "big three" importers—Mainland China, India, and Brazil. Several other countries will join the league of major fertilizer exporters, among them Indonesia, Mexico, Venezuela, and the Mid-east countries.

Current projections indicate that, as a group, the developing world will greatly cut down on nitrogen and phosphate imports. Their potash imports, by contrast, may double.

**Steeper potash prices?** A footnote to the potash situation: Canada is the kingpin of the world's potash trade, and its potash industry was recently nationalized. The Saskatchewan government has stated it wants higher prices for exports. So, farmers of the world—U.S. farmers in particular, since they get three-fourths of their potash from Canada—should brace themselves for possible hikes in potash prices, though no big swings are in the offing for 1976 thanks to abundant supplies.

A few words about the developments that sparked the explosion in fertilizer prices in the early seventies:

After weathering stormy financial times in the late 1960's, the climate improved for the fertilizer industry as the next decade began. Export prices of some fertilizer materials increased as much as 7 times from the early 1970's to 1974.

**Poor nations bear the brunt.** Developing countries got the short end of the stick, however. In 1974, for example, prices for urea and diammonium phosphate (DAP) shot up to almost $400 a ton compared to import costs of $50 in the early 1970's.

Faced with record high world grain prices, those developing countries that relied on imports for food desperately tried to boost food production. Fertilizer was the key to their plans.

In the fall of 1973 the Food and Agriculture Organization (FAO) of the United Nations convened an Intergovernmental Consultation on Fertilizers which focused on the problems of developing countries to pay for and get the high-priced fertilizers they needed.

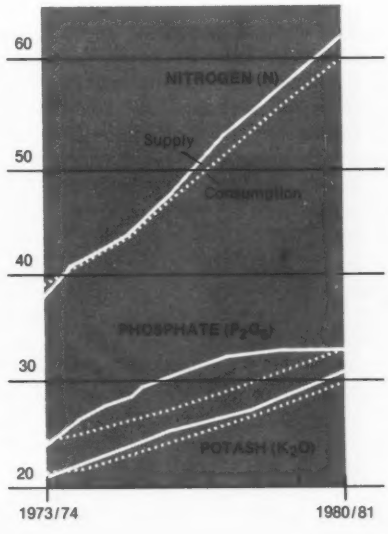
**FAO pessimistic.** The FAO's prognosis was gloomy, and predicted production deficits for many fertilizers in the late 1970's. Believing the shortage situation would remain or worsen, some of the developing countries chose to stock up, with the result that world fertilizer prices soared to new highs.

Production also swelled but not enough to bring prices down to levels developing countries could afford, so they decided to use less fertilizer. U.S. farmers, too, cut back on fertilizer in 1974/75 (by 9 percent). By mid-1975 world prices of major fertilizer products had declined by 50 percent and more from their 1974 peaks.

[Based on *World Fertilizer Review and Prospects to 1980/81*, FAER-115, February 1976, by Richard B. Reidinger, Foreign Demand and Competition Division.]

## WORLD FERTILIZER OUTLOOK

MIL. TONS OF NUTRIENT



(Continued From Page 15)

The shortage particularly hits Alaskans hard because honeybees must be reordered from the "lower 48" every year. Unlike the native bees, domestic honeybees cannot survive Alaska's long winters very well—even with special attention—so they are usually destroyed each fall.

**Berries main fruit.** Commercially speaking, fruit production is insignificant in the 49th State. Several berries—such as cranberries, raspberries, blueberries, gooseberries, strawberries, and a few less common ones—are natives there, but these are eaten locally and don't usually enter market channels.

Extensive research on the strawberry has resulted in improved winter hardiness and quality. Labor costs to harvest the crop, however, have kept production down, but "pick-your-own" patches could overcome this problem.

Some winter-hardy apple trees have been introduced into the State, but other fruit trees such as apricot, peach, pear, plum, and cherry have been unsuccessful. Further research might result in varieties which can adapt to the northern climate.

**Revegetation interest growing.** An up-and-coming agricultural product in the State is turfgrass. Due to the oil pipeline construction and the resulting boom in housing and other building, revegetation has become a prime environmental concern. And with improved strains of grasses—such as sweet holygrass—this market looks promising.

The ornamental market could also be a fertile one, as many of the shipped-in plants lose some quality in transit or are poorly adapted to Alaska's climate, as in the case of some landscaping plants. However, very few ornamentals—other than some greenhouse potted plants—are being commercially grown in the State.

Another agricultural asset of the State is timber. Although little is now being cut for local use as rough lumber or house logs, there is a tremendous potential in Alaska's forests.

[Based on special material from Carson D. Evans, National Economic Analysis Division, and Walter Kubley, Forest Service, *Alaska's Agricultural Potential*, Pub. No. 1, Cooperative Extension Service, and reports from the University of Alaska.]

# Recent Publications

*Single copies of the publications listed here are available free from The Farm Index, Economic Research Service, Rm. 1664–So., U.S. Department of Agriculture, Washington, D.C. 20250. However, publications indicated by (*) may be obtained only by writing to the experiment station or university. For addresses, see July and December issues of The Farm Index.*

**Households Eligible for a National Farmworker Program Under the Comprehensive Employment and Training Act of 1973.** Gene Rowe and Leslie Whitner Smith, Economic Development Division. AER-324.

Based on the Census Bureau's 1973 Farm Working Force Survey, this report identifies 169,000 farm wageworkers eligible for a national farmworker program under Title III of the Comprehensive Employment and Training Act. These workers accounted for 6 percent of the total 2.7 million farm wageworkers. And most of them (89 percent) lived in households where the combined earnings of family members were less than $5,000 in 1973. The report further breaks down the number and distribution of eligible farmworkers and their dependents by migratory status, ethnic group, earnings, and region.

**Fact Book of U.S. Agriculture.** Office of Communication. Misc. Pub. 1063.

An update of the 1972 version, this book is a handy reference source for those who speak and write about agriculture. It is divided into five major parts: Farm production supplies, the farming operation, food marketing, agricultural services, and improving the rural social environment. Copies of the Fact Book are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price per copy is $1.90.

**Price Spreads, Costs, and Productivity in Poultry and Egg Marketing, 1955-74.** George B. Rogers, Commodity Economics Division. AER-326.

This study develops measures of costs, productivity, and returns in the marketing systems for eggs and poultry during 1955-74, using USDA's market basket price spreads series as a base. It also examines the changes in costs and productivity for individual marketing functions and the substitution between various inputs, based on a large number of previous studies.

**Developments in Marketing Spreads for Agricultural Products in 1975.** Economic Research Service. AER-328.

Marketing spreads accounted for three-fourths of last year's 7 percent increase in the retail cost of a market basket of farm foods. The spreads themselves were 9 percent wider than in 1974, says the study, but less than half the recordbreaking rise of a year earlier. Farmers received an average of 42 cents of each consumer food dollar in 1975—down a penny from 1974.

**Relationships of Food Costs, Expenditures, and Prices, 1960-74.** Alden C. Manchester, National Economic Analysis Division. AER-329.

During 1960-74, per capita expenditures for food for use at home leaped 86 percent, according to this study. Price increases were mainly responsible, but changes in household composition also contributed. The study also discusses time series measures, three consumer expenditure surveys, and the ARS food plans.

# Economic Trends

| | UNIT OR BASE PERIOD | 1967 | 1975 YEAR | 1975 Feb. | 1975 Dec. | 1976 Jan. | 1976 Feb. |
|---|---|---|---|---|---|---|---|
| **Prices:** | | | | | | | |
| Prices received by farmers | 1967=100 | - | 181 | 168 | 187 | 186 | 187 |
| Crops | 1967=100 | - | 194 | 192 | 188 | 188 | 190 |
| Livestock and products | 1967=100 | - | 172 | 151 | 187 | 185 | 185 |
| Prices paid, interest taxes and wage rates | 1967=100 | - | 185 | 180 | 189 | 193 | 193 |
| Family living items | 1967=100 | - | 177 | 175 | 182 | 183 | 183 |
| Production items | 1967=100 | - | 188 | 180 | 192 | 193 | 194 |
| Ratio [1] | 1967=100 | - | 98 | 93 | 99 | 96 | 97 |
| Wholesale prices, all commodities | 1967=100 | - | 174.9 | 171.3 | 178.7 | 179.4 | 179.4 |
| Industrial commodities | 1967=100 | - | 171.5 | 168.4 | 176.1 | 177.3 | 178.1 |
| Farm products | 1967=100 | - | 186.7 | 174.6 | 193.8 | 192.8 | 191.0 |
| Processed foods and feeds | 1967=100 | - | 182.6 | 182.6 | 181.0 | 179.4 | 176.4 |
| Consumer price index, all items | 1967=100 | - | 161.2 | 157.2 | 166.3 | 166.7 | - |
| Food | 1967=100 | - | 175.4 | 171.6 | 180.7 | 180.8 | - |
| **Farm Food Market Basket:** [2] | | | | | | | |
| Retail cost | 1967=100 | - | 173.6 | 169.3 | 178.8 | 178.5 | - |
| Farm value | 1967=100 | - | 186.8 | 173.6 | 189.9 | 186.4 | - |
| Farm-retail spread | 1967=100 | - | 165.3 | 166.5 | 171.8 | 173.5 | - |
| Farmers' share of retail cost | Percent | - | 42 | 40 | 41 | 40 | - |
| **Farm Income:** [3] | | | | | | | |
| Volume of farm marketings | 1967=100 | - | 115 | 89 | 134 | 123 | - |
| Cash receipts from farm marketings | Million dollars | 42,817 | 90,572 | 5,442 | 8,722 | 8,100 | - |
| Crops | Million dollars | 18,434 | 47,327 | 2,541 | 4,745 | 4,000 | - |
| Livestock and products | Million dollars | 24,383 | 43,245 | 2,901 | 3,977 | 4,100 | - |
| Realized gross income [4] | Billion dollars | 49.9 | - | - | - | - | - |
| Farm production expenses [4] | Billion dollars | 38.3 | - | - | - | - | - |
| Realized net income [4] | Billion dollars | 11.6 | - | - | - | - | - |
| **Agricultural Trade:** | | | | | | | |
| Agricultural exports | Million dollars | - | 21,894 | 1,920 | 1,960 | 1,994 | - |
| Agricultural imports | Million dollars | - | 9,295 | 694 | 768 | 818 | - |
| **Land Values:** | | | | | | | |
| Average value per acre | Dollars | [6] 168 | [7] 354 | - | - | - | [8] 381 |
| Total value of farm real estate | Billion dollars | [6] 181.9 | [7] 370 | - | - | - | [8] 398 |
| **Gross National Product:** [4] | Billion dollars | 796.3 | 1,498.8 | - | 1,572.5 | - | - |
| Consumption | Billion dollars | 490.4 | 963.8 | - | 1,001.0 | - | - |
| Investment | Billion dollars | 120.8 | 182.6 | - | 205.4 | - | - |
| Government expenditures | Billion dollars | 180.2 | 331.2 | - | 344.8 | - | - |
| Net exports | Billion dollars | 4.9 | 21.2 | - | 21.2 | - | - |
| **Income and Spending:** [5] | | | | | | | |
| Personal income, annual rate | Billion dollars | 626.6 | 1,245.9 | 1,203.2 | 1,300.2 | 1,313.8 | - |
| Total retail sales, monthly rate | Million dollars | 26,151 | 48,674 | 46,914 | 51,699 | 51,531 | - |
| Retail sales of food group, monthly rate | Million dollars | 5,759 | 10,970 | 10,643 | 11,166 | 11,277 | - |
| **Employment and Wages:** [5] | | | | | | | |
| Total civilian employment | Millions | 74.4 | [9] 84.8 | [9] 84.2 | [9] 85.4 | [9] 86.2 | [9] 86.3 |
| Agricultural | Millions | 3.8 | [9] 3.4 | [9] 3.3 | [9] 3.2 | [9] 3.3 | [9] 3.2 |
| Rate of unemployment | Percent | 3.8 | 8.5 | 8.0 | 8.3 | 7.8 | 7.6 |
| Workweek in manufacturing | Hours | 40.6 | 39.4 | 38.8 | 40.3 | 40.5 | 40.3 |
| Hourly earnings in manufacturing, unadjusted | Dollars | 2.83 | 4.81 | 4.68 | 5.00 | 5.02 | 5.02 |
| **Industrial Production:** [5] | 1967=100 | - | 114 | 111 | 118 | 119 | - |
| **Manufacturers' Shipments and Inventories:** [5] | | | | | | | |
| Total shipments, monthly rate | Million dollars | 46,449 | 82,811 | 80,210 | 87,616 | 89,251 | - |
| Total inventories, book value end of month | Million dollars | 84,655 | 146,574 | 151,993 | 146,574 | 146,780 | - |
| Total new orders, monthly rate | Million dollars | 46,763 | 81,420 | 78,446 | 86,754 | 88,434 | - |

[1]Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. [2] Average annual quantities of farm food products purchased by urban wage earner and clericalworker households (including those of single workers living alone) in 1959-61—estimated monthly. [3]Annual and quarterly data are on 50-State basis. [4]Annual rates seasonally adjusted 1st quarter. [5]Seasonally adjusted. [6]As of March 1, 1967. [7] As of March 1, 1975. [8]As of November 1, 1975. [9]Beginning January 1972 data not strictly comparable with prior data because of adjustment to 1970 Census data.

Source: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Monthly Retail Trade Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale and Consumer Price Index).

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